DALI Gateway

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This feature is only available if using Evolution firmware version 32.0 (2020-03-27) or later.

A CBU-DCS can be used to act as a gateway between a wired DALI network (controlled by DALI controller hardware and software) and a wireless Casambi network. Before connecting the CBU-DCS, it must first be in an un-paired state and the CBU-DCS DALI Gateway profile must be applied (see the Luminaires section for unpairing and profile changing instructions). The CBU-DCS must be connected to the same powered DALI bus as the DALI controller. Once physically connected, the CBU-DCS can be paired to the existing Casambi network.

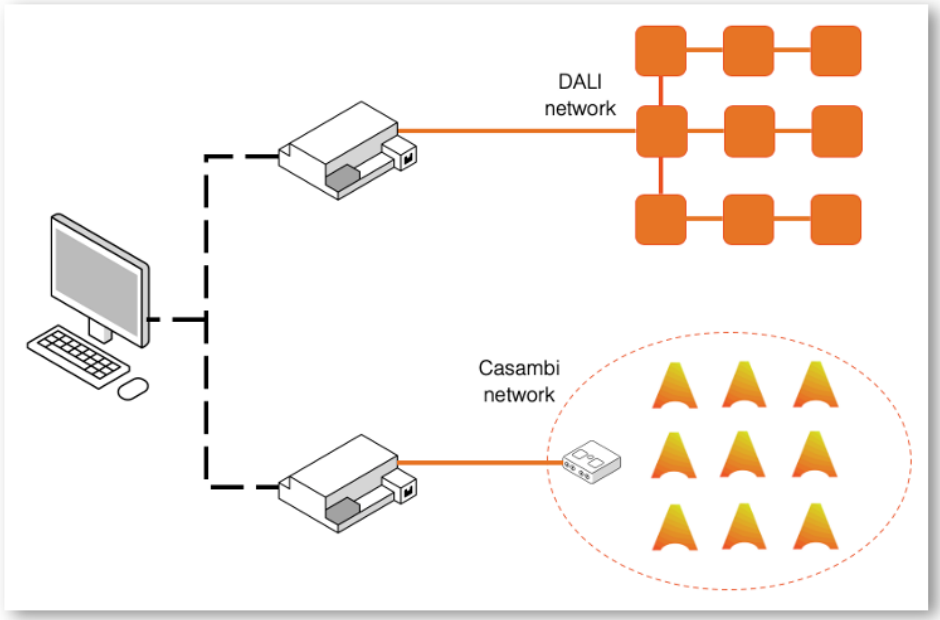
Any device which exists in the Casambi network will then appear as standard DALI gear to the wired DALI controller software. Each Casambi device uses one DALI address but the CBU-DCS DALI gateway does not; instead it appears transparent to the DALI controller software.

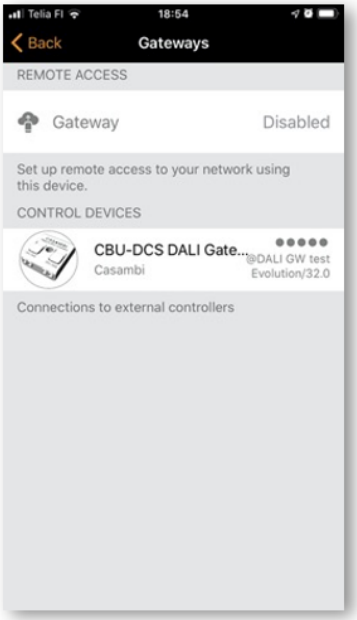
Casambi devices which control more than one channel appear as single-channel DALI gear to the DALI controller software, therefore the separate channels cannot be dimmed individually by the DALI controller software, only by the Casambi app.

Casambi devices which use TW, RGB or XY controls are presented to the DALI controller software as DALI or DALI DT8 (Tc/RGB/XY) devices.

If your Casambi network exceeds the DALI limitation of 64 devices, you can simply add multiple CBU-DCS DALI gateways in your existing Casambi network. The DALI controller software will then be able to address all of your Casambi devices. All Casambi luminaires can be addressed by the DALI controller software, regardless of what type of Casambi device they are. i.e. the Casambi device does not need to be a DALI-controllable device.

As with other Casambi devices, the gateway device can be renamed and assigned its own icon.





DALI gateway - Gateway Parameters

Control Scope defines which devices are passed though the DALI gateway to the DALI control software. The default option is All luminaries. However, this can also be restricted to a single scene, in which you can define the devices which you wish to be seen by the DALI controller software.

Control priority defines the level at which the gateway will prioritise commands sent by the DALI control software:

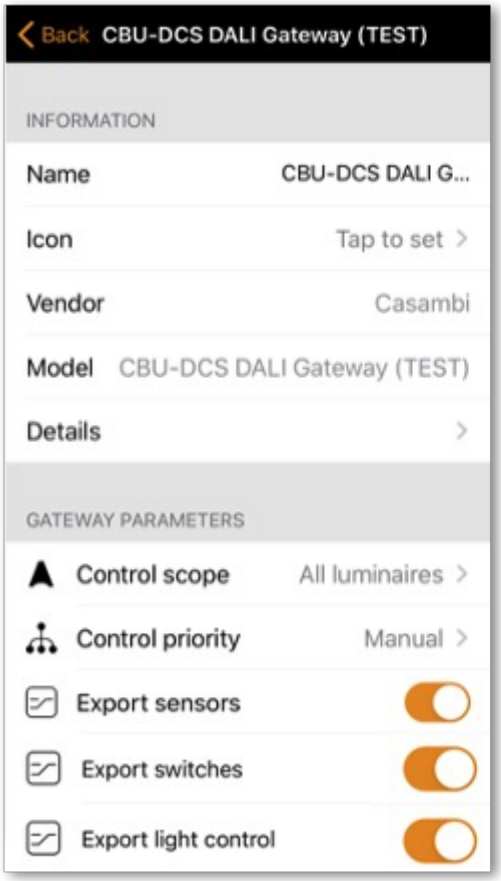
- Higher than manual Prevents the Casambi system (apps, sensors, switches, timers) from controlling Casambi devices. Casambi devices can only be controlled by the DALI controller software.
- Manual Is the default setting. It allows control of Casambi devices by both the DALI controller software and the Casambi app.
- Higher than automation Allows the DALI controller software to control lights which are under automation by presence/absence sensors or timers, but not those manually controlled by the Casambi app.
- Lowest-priority automation Allows the DALI controller software to control lights which are not currently automated by presence/absence sensors or timers. Any luminaire control from the Casambi app (manual, timers or sensor automation) will take over the externally set dimming levels.

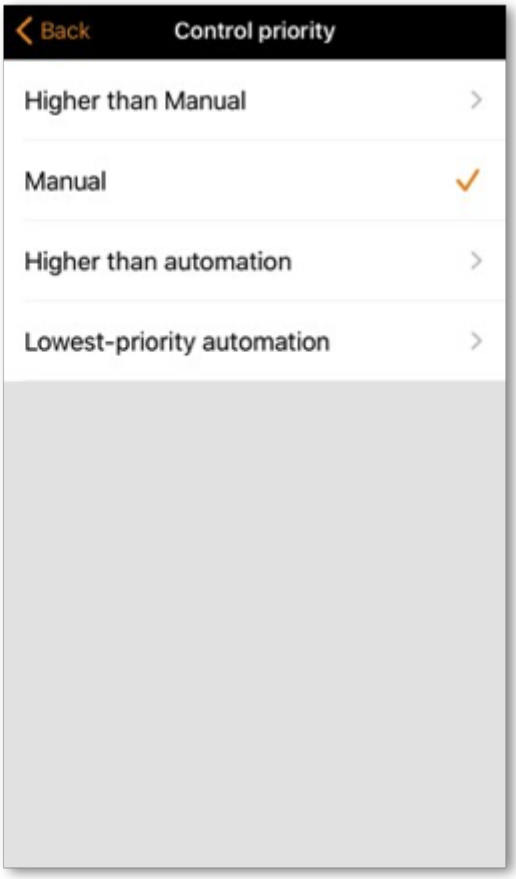
The resume automation button (@) must be used to allow the Casambi app to regain full control if the Higher than automation or Lowest-priority automation options are used.

Export sensors Allows Casambi enabled sensors to be available as DALI-2 sensors in the DALI network.

Export switches Allows Casambi enabled switches to be available as DALI-2 push buttons in the DALI network.
Export light control Allows changes in the dimming level of each DALI addressed Casambi luminaire to be automatically transferred to the DALI network.

- This option is suitable for integrations with BMS or DALI systems that rely on passive observation of DALI communication traffic in order to update the state of the light level to their system. i.e. They do not typically send DALI queries to devices.
- Tuneable white and colour changes for DALI DT8 devices are not automatically available.
- Non-addressed (Broadcast) devices cannot send this information.
- Enabling this option may interfere with DALI controllers that assume single-master control of the DALI bus.





Input dimming curve defines how the dimming levels that the DALI system sends to the Casambi DALI Gateway are interpreted and sent further within the Casambi network.

The Casambi DALI gateway profile offers the unique possibility to control any type of luminaire from a DALI system. As such, Casambi enabled luminaires may utilise linear, logarithmic or custom dimming curves, or there may even be a mixture of all of these in a single Casambi network. A DALI system dimming curve usually uses the DALI standard logarithmic curve (with 0-255 steps). However, some DALI control systems (or non-DALI BMS adapters) may use a 0-100% linear curve. Differing dimming curves between the control system and luminaires may result in a dimming response that is not optimal when controlling a Casambi network from DALI. The Input dimming curve option therefore offers the possibility to change how the DALI system dimming curve is transferred into the Casambi network.

Options for the Input dimming curve are:

- default: This is actually the same as Linear.
- Linear: Transfers the dimming curve received from the DALI system into the Casambi network “as is”.
- Logarithmic (DALI): Will apply a logarithmic curve to the curve received from the DALI system.
    - Note that this setting may not respond ideally if Update actual dim level has been enabled.

The most suitable option to select will depend entirely on the combinations of dimming curves used in a specific set up. Unfortunately, uniform results may not be possible to achieve if the Casambi network contains luminaires having a mixture of different dimming curves.

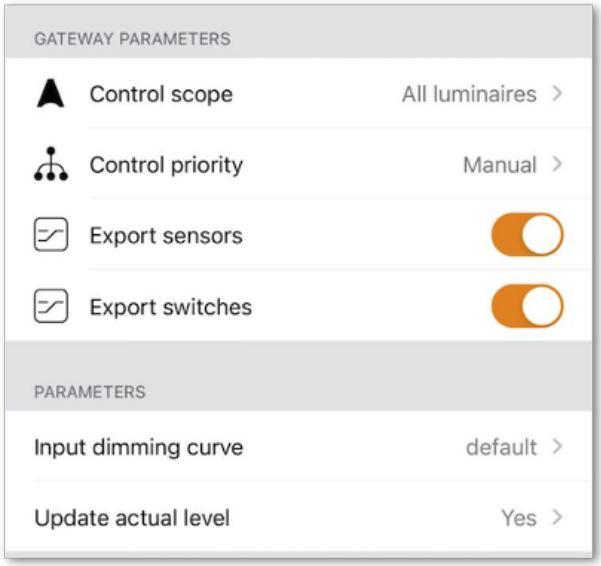
Update actual dim level Depending on the Control priority defined in the DALI Gateway settings, dimmed levels and the

actual state of tuneable white and colour controls (if DALI DT8 devices are concerned) sent by the DALI system may be overridden by Manual or Automation control actions in a Casambi network. Since use cases vary, there may or may not be the requirement for changes made in the Casambi network to be visible to the DALI system.

Configuration options are:

- Yes (default)
  - The DALI system can actively query the current dimmed level/colour from the DALI Gateway regardless of whether a change was made by the DALI system or directly in the Casambi network. Dimmed levels/colour are NOT automatically transferred from Casambi to DALI.
- No
  - Only the dimmed level/colour changes sent by the DALI system itself are shown in the DALI system. Any changes made in the Casambi network are not visible to the DALI system.
- Only at Manual priority
  - “Yes (default)” will be applicable if the DALI Gateway Control priority has been set to Manual priority. “No” will be applicable if the Control priority setting is set to any other setting.

In all cases the DALI system must still send a command (query) requesting the latest dimmed level/colour status information (i.e. Changes in the Casambi network are not automatically transferred directly from Casambi to DALI).



DALI Gateway input device limitations

The DALI standard specifies a maximum of 64 DALI luminaire addresses and 64 DALI-2 input device addresses. Input devices include push-buttons, sliders, occupancy sensors, and light sensors.

A CBU-DCS DALI Gateway enables 64 input devices to be addressed according to the DALI standard, but only 80 DALI-2 “instances” can be processed by the DALI Gateway. This means that the amount of input devices possible in your Casambi network may be limited depending on the number of instances the devices use.

The quantity of input device instances varies.

- A single motion sensor uses 1 instance.
- A lux/presence sensor uses 2 instances.
- A single push button uses 1 instance (e.g. A 4-button switch panel uses 4 instances).
- An Xpress switch has 4 instances, one for each configurable button (+, -, up and down commands are not transferrable via the DALI gateway)
- Casambi ready products from our ecosystem partners may use more instances depending on their design (e.g. The number of individual push buttons they contain).
    - An EnOcean switch panel uses 4 instances.
    - Drivers can also be designed with push button input/s and would then use at least 1 instance.

When planning DALI Gateway use in a Casambi network containing input devices, a calculation of the number of input device instances is necessary to ensure communication through the DALI Gateway works as desired. If you exceed the 80-instance limit, input devices will still be addressable (up to 64 devices) but some instances will not be recognized.

Input device limit calculation examples:

a) 64x single push buttons = 64 DALI instances = OK
b) 45x lux/presence sensor = 90 DALI instances = NOT OK
c) 20x presence only sensors + 5x Four button switches = 40 DALI instances (20+(5x4)) = OK